nchs MONTHLY VITAL STATISTICS REPORT

Final Data From the National Center for Health Statistics

Vol. 36, No. 7 Supplement • October 30, 1987

Trends and Variations in Post Partum Sterilization in the United States, 1972 and 1980

by Charles W. Warren, Ph.D., Division of Reproductive Health, Centers for Disease Control, Kenneth G. Keppel, Ph.D., Division of Vital Statistics, National Center for Health Statistics, and Melinda L. Flock, M.S.P.H., Division of Reproductive Health, Centers for Disease Control

Introduction

The use of male and female surgical sterilization by married couples in the United States has increased substantially since 1965. By 1982 surgical sterilization was the most popular single method of contraception used in the United States (Bachrach, 1984; Westoff and Jones, 1977). In 1982 an estimated 7.9 million married women relied on sterilization (male or female) as their contraceptive method (Bachrach, 1984). Due to the rapid adoption of surgical sterilization in the last few years—especially the female procedure (tubal ligation)—surgical sterilization is now more frequently used than the birth control pill as a contraceptive method among married couples in the United States (Bachrach, 1984).

Female sterilization performed immediately following a completed pregnancy is referred to as a "post partum" procedure. Female sterilization not performed immediately following a completed pregnancy is referred to as an "interval" procedure. Although the proportion of all sterilizations performed post partum declined during the 1970's (Centers for Disease Control, 1981), the number of post partum sterilizations increased significantly. This report examines trends in post partum sterilization between 1972 and 1980 among married mothers and its levels within social and demographic subgroups. More extensive analyses of the 1972 data have been published previously (NCHS, 1977a, 1977b).

Data and methods

The data presented in this report are from the 1972 and 1980 National Natality Surveys (NNS's) conducted by the National Center for Health Statistics. These surveys are based on probability samples of all live births to U.S. residents that occurred in 1972 and 1980, respectively. Information beyond that obtainable from birth certificates was collected through questionnaires sent to mothers, hospitals, and attendants at delivery. In 1972 and 1980 hospitals were asked whether any operation was performed that would prevent future pregnancies. In 1980 only, hospitals were asked what type of operation was performed and why. Missing values for all sources of information were imputed and each birth was weighted to produce national estimates. A more detailed description of these surveys is included in the Technical notes.

When interpreting the results discussed in this report, a number of points must be kept in mind. First, other studies indicate that the social and demographic relationships for post partum sterilization presented here may differ from relationships for interval and male sterilizations (Bumpass and Presser, 1972). Second, it should be emphasized that these data include all operations performed post partum to prevent future pregnancies (tubal ligation, hysterectomy, and others). Based on data from hospitals included in the 1980 NNS, 94 percent of post partum sterilizations of married mothers were done by tubal ligation (as opposed to other types of female sterilization), and 94 percent were done solely for contraceptive reasons. The findings discussed in this report are, therefore, most representative of post partum tubal ligations performed for contraceptive reasons. Third, the post partum sterilization rates presented in this report are for incidence, not prevalence; that is, they refer only to post partum sterilizations among mothers who had a live birth in 1972 or 1980. Fourth, the patterns described for post partum sterilization among married mothers who delivered in a hospital may differ from patterns for unmarried mothers and for nonhospital births in 1972 and 1980. The proportion of live births to unmarried mothers changed from 12.4 percent in 1972 to 18.4 percent in 1980,

while the proportion of hospital live births changed from 99.2 percent in 1972 to 99.0 percent in 1980.

Incidence of post partum sterilization

The estimated number of married mothers in the United States who were sterilized following a hospital delivery of a live birth increased from 220,000 in 1972 to 330,000 in 1980. The percent of married mothers sterilized post partum increased from 7.8 percent in 1972 to 11.3 percent in 1980 (figure 1), a relative increase of 45 percent. The increase in the percent of married mothers sterilized post partum was greater for black than for white mothers. The percent of married black mothers who were sterilized nearly doubled from 9.8 percent in 1972 to 19.2 percent in 1980, a relative increase of 96 percent. Among married white mothers, the percent sterilized increased from 7.7 to 10.5 percent over the same period, a relative increase of 36 percent. In 1972 the difference in the percent sterilized between white and black married mothers was not statistically significant. In 1980, however, the difference was statistically significant.

Between 1972 and 1980, the percent of married mothers sterilized post partum increased in each of the four regions of the United States (figure 2). In 1972 there were no significant differences among the regions. In 1980, however, the South had the highest percent of married mothers sterilized post partum. The South also had the greatest percent increase in post partum sterilization between 1972 and 1980. During this period the percent of married mothers sterilized post partum increased by 26–36 percent in the other regions compared with 69 percent in the South.

In 1980 the percent of married white mothers sterilized in the South was also higher than the percent in the other regions (table 1). Between 1972 and 1980, the percent of married white mothers sterilized in the South increased by 59 percent. The percent of married black mothers sterilized in the South more than doubled, from 9.2 percent in 1972 to 19.6 percent in 1980.

Because most post partum sterilizations are performed for contraception, differences in percents of mothers sterilized according to the mother's age would be expected. In 1972 the percent of mothers sterilized increased for each successive age group (figure 3). In 1980 the positive association between age

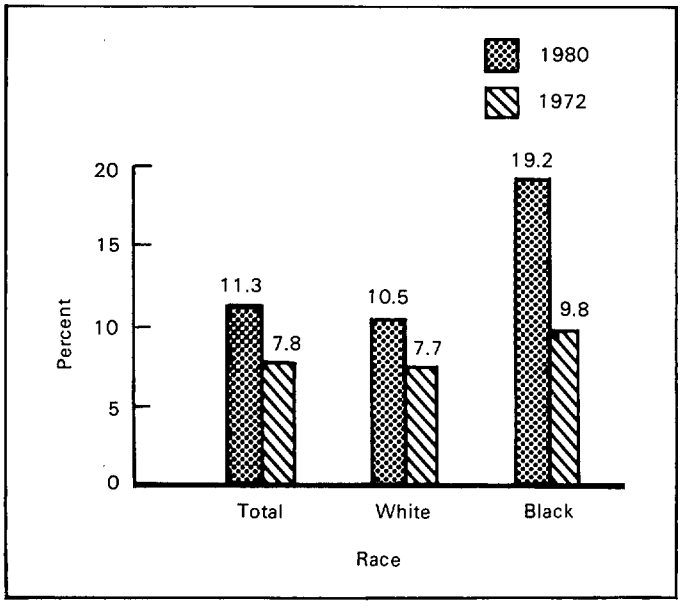

Figure 1. Percent of married mothers sterilized following hospital delivery by race of mother: United States, 1972 and 1980 National Natality Surveys

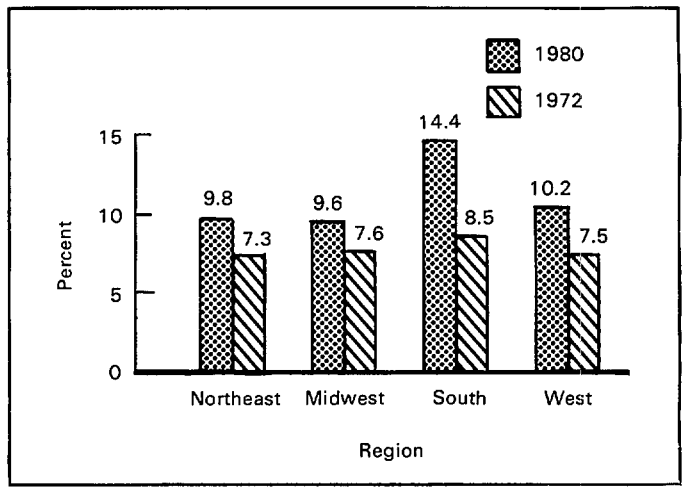

Figure 2. Percent of married mothers sterilized following hospital delivery by region of residence: United States, 1972 and 1980 National Natality Surveys

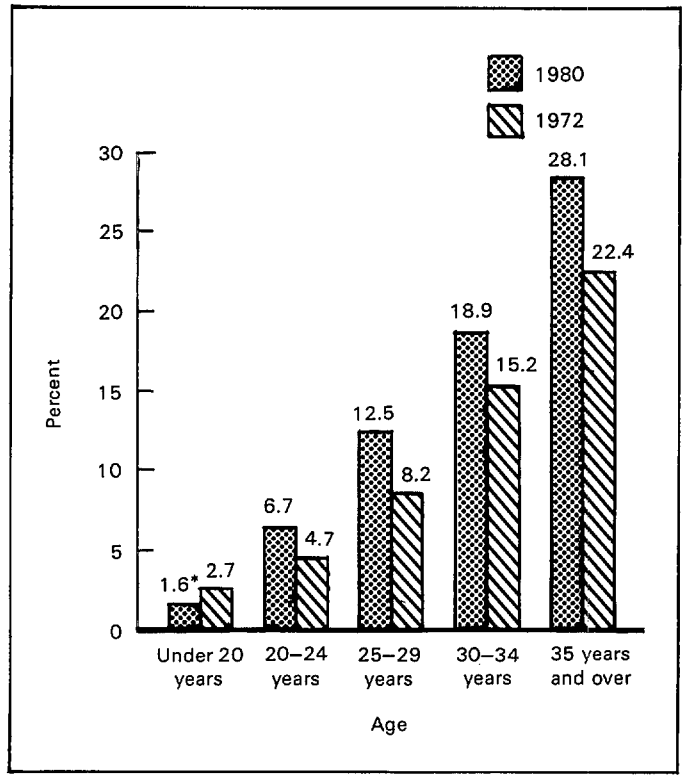

Figure 3. Percent of married mothers sterilized following hospital delivery by age: United States, 1972 and 1980 National Natality Surveys

and the percent of mothers sterilized was again evident: Among mothers 20 years and over, the percent sterilized increased for each successive age group. Between 1972 and 1980, the percent sterilized increased among married mothers in the age groups from 20 to 34 years of age. In 1980 there were not enough married teenagers sterilized to obtain a reliable estimate, and the apparent increase among mothers 35 years and over was not statistically significant.

The same patterns are evident among married white mothers (table 1). The percent sterilized tended to increase with age and over time within age groups, but not all of the differences were statistically significant. Although the percents for married black mothers are based on relatively few cases, the same patterns are evident.

The number of prior live births also influences decisions about sterilization. In 1972 the percent of mothers sterilized increased with each additional birth, from 1.9 percent for mothers having their first child to 19.3 percent for mothers having at least a fourth child (figure 4). A similar pattern was found in 1980, when the percent of mothers sterilized increased with each additional birth, from 1.0 percent for mothers having their first child to 26.1 percent for mothers having their third child. In 1980 there was no statistically significant difference in the percent sterilized post partum between mothers with three children and those with four or more children.

Between 1972 and 1980, the percent of married mothers sterilized after their first live birth declined from 1.9 to 1.0 percent. At each of the other birth orders, the percent of mothers sterilized increased between 1972 and 1980. Among mothers having their second live birth, the percent sterilized increased by 123 percent, substantially more than the increase for the other live-birth orders. This may be evidence of an increasing desire for a two-child family. These differentials and trends are generally evident for both white and black women.

The percents of married mothers sterilized post partum by live-birth order and age are shown in table 2. The percents for mothers having their first live birth are unreliable because post partum sterilization is relatively rare among mothers under 30 years of age and because first births are relatively rare among mothers 30 years and over. Among mothers having a second live birth, the percent of post partum sterilizations more than doubled between 1972 and 1980 for mothers in the 20–24 and 25–29 year age groups. Among mothers having a third or higher order live birth, increases in the percents sterilized were evident for mothers 20 years and over, but these increases were not as great as for those mothers having a second live birth.

There was also an association between the wantedness status of a pregnancy and the percent of mothers sterilized (figure 5). In 1980, 9–10 percent of mothers who wanted the pregnancy "earlier" or "then" and 12 percent of mothers who wanted the pregnancy "later" were sterilized. The percent of mothers sterilized following an unwanted pregnancy (31 percent) was about three times that for mothers whose pregnancy was wanted. The same pattern was evident in 1972.

In table 3 the percent of mothers sterilized is shown by wantedness status and age. In 1972 differences by wantedness

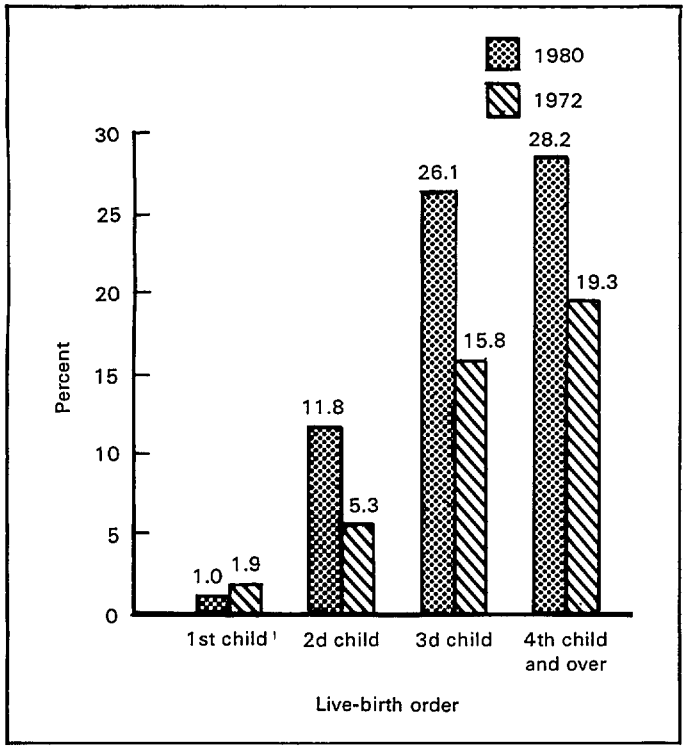

Figure 4. Percent of married mothers sterilized following hospital delivery by live-birth order: United States, 1972 and 1980 National Natality Surveys

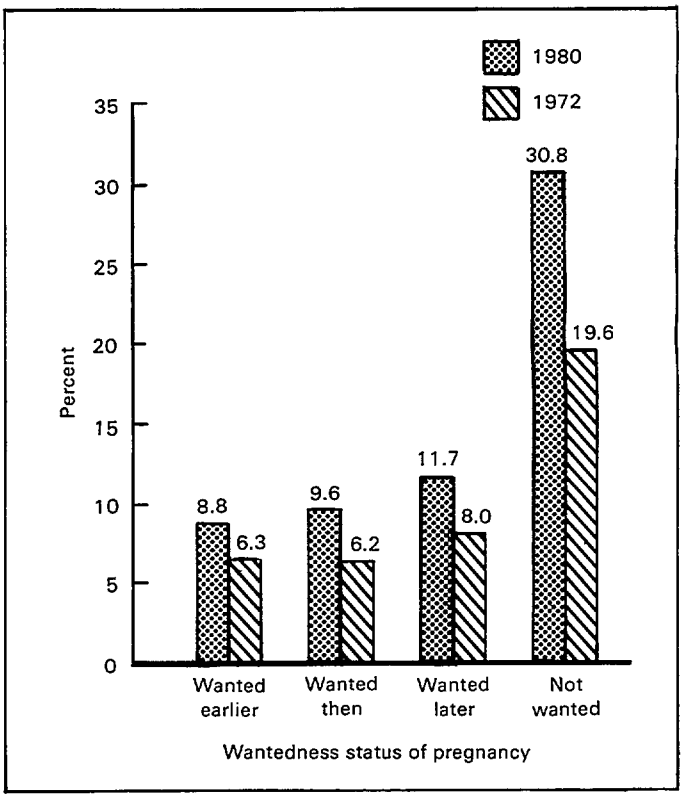

Figure 5. Percent of married mothers sterilized following hospital delivery by wantedness status of pregnancy: United States, 1972 and 1980 National Natality Surveys

status were greatest for mothers 25–29 years of age. Between 1972 and 1980, among mothers 25–29 years of age, the percent sterilized increased by 78 percent for mothers whose pregnancies were "wanted then" and by 97 percent for those whose pregnancies were not wanted. In 1980 among mothers 25–29 years of age, the range in the percent sterilized by wantedness status was greater than it had been in 1972, and it was also greater than the range for the other age groups.

The percent of mothers sterilized in 1980 is shown by educational attainment and region of residence in table 4. Although an inverse association between the percent of mothers sterilized and years of school completed is apparent, not all of the differences are statistically significant. The difference between percents sterilized for mothers with fewer than 8 years of school (19.4) and 9–11 years of school (12.5) is not significant, nor is the difference between percents for mothers with 9–11 years of school and 12 years of school (12.1).

When the regions are compared, the most obvious difference is the higher proportion of mothers with 12 years of school or more who were sterilized in the South. In the other regions, 10–11 percent of mothers with 12 years of school and 7–8 percent of the mothers with 13 years of school or more were sterilized. In the South, however, 15.6 percent of mothers with 12 years of school and 12.2 percent of mothers with 13 years of school or more were sterilized. The higher percent of mothers sterilized in the South is, therefore, due in part to the higher proportion of mothers with 12 years of school or more who chose post partum sterilization.

References

Bachrach, C. A. 1984. Contraceptive practice among American women, 1973–1982. *Family Planning Perspectives* 16(6):253–259.

Bumpass, L. L., and H. B. Presser. 1972. Contraceptive sterilization in the U.S.: 1965 and 1970. *Demography* 9(4):531–548.

Centers for Disease Control. 1981. *Surgical Sterilization Surveillance—Tubal Sterilization*, 1976–1978. Public Health Service. Atlanta, Ga.

National Center for Health Statistics, P. J. Placek. 1977a. The incidence of sterilization following delivery of legitimate live births in hospitals: United States. *Monthly Vital Statistics Report.* Vol. 26, No. 3 Supp. DHEW Pub. No. (HRA) 77–1120. Health Resources Administration. Rockville, Md.

National Center for Health Statistics, P. J. Placek. 1977b. The relationship of maternal health factors to sterilization following delivery of legitimate live births in hospitals: United States. *Monthly Vital Statistics Report.* Vol. 26, No. 3 Supp. 2. DHEW Pub. No. (HRA) 77–1120. Health Resources Administration. Rockville, Md.

National Center for Health Statistics, K. G. Keppel, R. L. Heuser, P. J. Placek, et al. 1986. Methods and response characteristics: 1980 National Natality and Fetal Mortality Surveys. *Vital and Health Statistics.* Series 2, No. 100. DHHS Pub. No. (PHS) 86–1374. Public Health Service. Washington: U.S. Government Printing Office.

Westoff, C. F., and E. F. Jones. 1977. Contraception and sterilization in the United States, 1965–1975. *Family Planning Perspectives* 9(4):153–157.

Symbols

- - -	Data not available
. . .	Category not applicable
-	Quantity zero
0.0	Quantity more than zero but less than 0.05
Z	Quantity more than zero but less than 500 where numbers are rounded to thousands
*	Figure does not meet standards of reliability or precision

Table 1. Estimated number of live hospital births to married mothers and percent of mothers sterilized following delivery, by race of mother and selected characteristics: United States, 1972 and 1980 National Natality Surveys

Characteristic	*All races*[1]				*White*				*Black*			
	Number of births in thousands		*Percent sterilized*		*Number of births in thousands*		*Percent sterilized*		*Number of births in thousands*		*Percent sterilized*	
	1980	*1972*	*1980*	*1972*	*1980*	*1972*	*1980*	*1972*	*1980*	*1972*	*1980*	*1972*
Total	2,921	2,818	11.3	7.8	2,585	2,490	10.5	7.7	243	278	19.2	9.8
Region of residence												
Northeast	526	603	9.8	7.3	474	548	9.6	7.4	40	50	*12.9	*7.0
Midwest	819	775	9.6	7.6	762	710	8.8	6.9	43	59	*23.8	*15.6
South	958	940	14.4	8.5	799	780	13.5	8.5	140	148	19.6	9.2
West	618	500	10.2	7.5	550	453	9.2	7.9	20	20	*19.0	*4.7
Age of mother												
Under 20 years	287	415	*1.6	2.7	262	353	*1.6	*2.5	22	57	*2.1	*3.8
20–24 years	984	1,031	6.7	4.7	874	915	6.0	4.4	85	100	12.6	*8.3
25–29 years	1,001	850	12.5	8.2	889	768	11.7	8.2	82	65	20.3	*10.6
30–34 years	506	356	18.9	15.2	437	311	17.8	15.1	40	37	31.6	*16.9
35 years and over	144	166	28.1	22.4	123	143	26.2	23.1	14	19	*44.1	*20.0
Live-birth order												
1st child	1,179	1,072	1.0	1.9	1,077	965	*0.9	1.8	67	84	*1.5	*2.5
2d child	989	869	11.8	5.3	882	781	11.3	5.2	76	77	16.7	*6.8
3d child	470	428	26.1	15.8	395	379	25.3	16.4	57	41	31.5	*13.5
4th child and over	284	450	28.2	19.3	231	365	26.5	19.5	44	76	*34.9	19.1
Wantedness status												
Wanted earlier	744	579	8.8	6.3	672	526	8.3	6.5	50	45	*14.7	*5.6
Wanted then	1,158	1,241	9.6	6.2	1,028	1,108	8.9	6.2	93	111	17.1	*7.6
Wanted later	836	766	11.7	8.0	731	655	10.8	7.5	80	95	18.6	11.5
Not wanted	183	233	30.8	19.6	155	201	28.9	19.9	20	28	*42.5	*20.0

[1]Includes races other than white and black.

NOTE: Figures may not add to totals because of rounding.

Table 2. Estimated number of live hospital births to married mothers and percent of mothers sterilized following delivery, by live-birth order and age of mother: United States, 1972 and 1980 National Natality Surveys

Live-birth order and age	Number of births in thousands		Percent sterilized	
	1980	1972	1980	1972
1st live birth	1,179	1,072	1.0	1.9
Under 20 years	219	323	-	*2.2
20–24 years	493	479	*0.5	*1.3
25–29 years	346	215	*1.4	*0.7
30 years and over	121	56	*3.1	*8.9
2d live birth	989	869	11.8	5.3
Under 20 years	60	82	*6.6	*3.7
20–24 years	349	384	10.4	5.1
25–29 years	380	308	11.1	4.6
30 years and over	199	96	17.3	*9.8
3d live birth and over	753	878	26.9	17.6
Under 20 years	*8	11	*8.6	*8.2
20–24 years	141	168	19.0	13.3
25–29 years	276	328	28.1	16.5
30 years and over	329	371	29.7	20.8

NOTE: Figures may not add to totals because of rounding.

Table 3. Estimated number of live hospital births to married mothers and percent of mothers sterilized following delivery, by age of mother and wantedness status of pregnancy: United States, 1972 and 1980 National Natality Surveys

Age and wantedness status	Number of births in thousands		Percent sterilized	
	1980	1972	1980	1972
Under 20 years	287	415	*1.6	2.7
Wanted earlier	60	70	-	*3.7
Wanted then	99	185	*2.0	*2.8
Wanted later	115	140	*2.0	*2.1
Not wanted	14	20	*3.1	*2.6
20–24 years	984	1,031	6.7	4.7
Wanted earlier	215	202	5.2	*3.6
Wanted then	414	480	6.3	4.5
Wanted later	323	305	7.8	5.2
Not wanted	31	44	*10.9	*8.0
25–29 years	1,001	850	12.5	8.2
Wanted earlier	283	194	8.6	6.5
Wanted then	418	397	11.2	6.3
Wanted later	256	197	14.8	10.4
Not wanted	44	63	35.8	18.2
30 years and over	649	522	21.0	17.5
Wanted earlier	186	113	16.2	12.6
Wanted then	227	179	16.3	14.2
Wanted later	143	124	22.7	17.5
Not wanted	93	106	39.1	28.4

NOTE: Figures may not add to totals because of rounding.

Table 4. Estimated number of live hospital births to married mothers and percent of mothers sterilized following delivery, by region of residence and educational attainment: United States, 1980 National Natality Survey

Region and years of school completed	*Number of births in thousands*	*Percent sterilized*
United States	2,921	11.3
0–8 years	114	19.4
9–11 years	410	12.5
12 years	1,338	12.1
13 years or more	1,059	9.0
Northeast	526	9.8
0–8 years	17	*6.5
9–11 years	53	*15.2
12 years	248	10.6
13 years or more	208	7.7
Midwest	819	9.6
0–8 years	20	*22.7
9–11 years	108	11.3
12 years	416	10.1
13 years or more	275	7.2
South	958	14.4
0–8 years	49	*22.8
9–11 years	168	13.3
12 years	423	15.6
13 years or more	318	12.2
West	618	10.2
0–8 years	28	*18.9
9–11 years	80	*10.6
12 years	252	11.2
13 years or more	258	8.1

Technical notes

Sources of data

Data presented in this report are based on the 1972 and 1980 National Natality Surveys (NNS's) conducted by the National Center for Health Statistics. More detailed descriptions of methods and procedures employed in these surveys can be found in other publications (NCHS, 1977a, 1977b, 1986). These notes briefly describe survey procedures relevant to this report.

The 1980 NNS was based on a probability sample of registered live births in the United States for 1980. The 1980 sample consisted of 9,941 live births, of which 7,825 were births to married mothers. This report is limited to married mothers because births to unmarried mothers were excluded from the 1972 NNS.

The 1972 NNS was based on a probability sample of 1 in 500 certificates of live birth filed in the United States in 1972. This resulted in a total sample of 6,505 live births, of which 5,689 were births to married mothers.

In both surveys, additional information was sought from sources named on birth certificates. Questionnaires were mailed to married mothers requesting information on their health practices, prenatal care, previous pregnancies, and social and demographic characteristics. Questionnaires were also mailed to the hospitals and to the attendants at delivery named on vital records. A questionnaire was sent to hospitals for all deliveries occurring in or en route to a hospital. A questionnaire was also mailed to the attendant at delivery (physician, nurse-midwife, and so forth) when the attendant's address differed from the address of the hospital.

Nonhospital births (60 in 1980 and 42 in 1972) are not included in this report because the hospital questionnaire was the source of information on post partum sterilizations. The NNS data have been weighted so that the estimates in this report are representative of all married mothers of live hospital births (2,921,000 in 1980 and 2,818,000 in 1972).

NOTE: A list of references follows the text.

Sampling error

Because NNS estimates are based on samples, they may differ from the figures that would have been obtained had all live births been surveyed. The use of probability sampling techniques makes it possible to approximate sampling errors for these estimates. The standard error is a measure of the variability that occurs by chance because a sample, rather than the population, is surveyed. While the standard errors calculated for this report reflect some of the random variation inherent in the measurement process, they do not measure any systematic error or bias that may be present in the data. For purposes of this report, standard errors for the 1980 NNS were estimated using a balanced-repeated-replication procedure, which produces highly reliable, unbiased estimates of sampling errors. Its application to the NNS is described elsewhere (NCHS, 1986). Approximate standard errors for the estimated percents of mothers sterilized can be derived by interpolation from table I for 1980 and table II for 1972. In this report, a percent estimate is considered unreliable if the unweighted numerator is based on fewer than 30 sample cases in 1980, or fewer than 20

Table I. Approximate standard errors for estimated percents expressed in percentage points by race of mother: 1980 National Natality Survey

Base of percent and race of mother	Estimated percent						
	2 or 98	5 or 95	10 or 90	20 or 80	30 or 70	40 or 60	50
All races and white							
10,000	2.7	4.2	5.8	7.8	8.9	9.5	9.7
30,000	1.6	2.4	3.4	4.5	5.1	5.5	5.6
50,000	1.2	1.9	2.6	3.5	4.0	4.3	4.3
70,000	1.0	1.6	2.2	2.9	3.4	3.6	3.7
100,000	0.9	1.3	1.8	2.5	2.8	3.0	3.1
200,000	0.6	0.9	1.3	1.7	2.0	2.1	2.2
500,000	0.4	0.6	0.8	1.1	1.3	1.3	1.4
700,000	0.3	0.5	0.7	0.9	1.1	1.1	1.2
1,000,000	0.3	0.4	0.6	0.8	0.9	1.0	1.0
2,000,000	0.2	0.3	0.4	0.5	0.6	0.7	0.7
3,000,000	0.2	0.2	0.3	0.4	0.5	0.5	0.6
Black							
10,000	2.8	4.3	5.9	7.9	9.1	9.7	9.9
30,000	1.6	2.5	3.4	4.6	5.2	5.6	5.7
50,000	1.2	1.9	2.6	3.5	4.0	4.3	4.4
70,000	1.0	1.6	2.2	3.0	3.4	3.7	3.7
100,000	0.9	1.4	1.9	2.5	2.9	3.1	3.1
200,000	0.6	1.0	1.3	1.8	2.0	2.2	2.2
300,000	0.5	0.8	1.1	1.4	1.7	1.8	1.8

Table II. Approximate standard errors for estimated percents expressed in percentage points: 1972 National Natality Survey

Base of percent	Estimated percent						
	2 or 98	5 or 95	10 or 90	20 or 80	30 or 70	40 or 60	50
10,000	2.2	3.5	4.8	6.4	7.3	7.8	8.0
30,000	1.3	2.0	2.8	3.7	4.2	4.5	4.6
50,000	1.0	1.6	2.1	2.9	3.3	3.5	3.6
70,000	0.8	1.3	1.8	2.4	2.8	3.0	3.0
100,000	0.7	1.1	1.5	2.0	2.3	2.5	2.5
200,000	0.5	0.8	1.1	1.4	1.6	1.8	1.8
500,000	0.3	0.5	0.7	0.9	1.0	1.1	1.1
700,000	0.3	0.4	0.6	0.8	0.9	0.9	1.0
1,000,000	0.2	0.3	0.5	0.6	0.7	0.8	0.8
2,000,000	0.2	0.2	0.3	0.4	0.5	0.6	0.6
2,500,000	0.1	0.2	0.3	0.4	0.5	0.5	0.5

sample cases in 1972, or if its relative standard error is 25 percent or greater.

In this report, a difference between two statistics is considered statistically significant if it could occur by chance no more than 5 percent of the time. The determination of statistical significance is based on a two-tailed *t*-test with 20 degrees of freedom. Terms in the text relating to differences such as "higher" or "less" indicate that the differences are statistically significant. Terms such as "similar" or "no difference" mean that no statistically significant difference exists between the estimates being compared. No inference about statistical significance should be made about any differences not discussed in the text; they may or may not be significant.

Definitions of terms

Sterilization—The fact of sterilization is determined from the hospital questionnaire using a single question: "Was any operation performed which will prevent future pregnancies?" In 1980 only, there were also questions about what type of operation was performed and why (NCHS, 1986).

NOTE: A list of references follows the text.

Race of mother—Race is derived from the birth certificate. The category "white" includes births to mothers reported as white, Mexican, Puerto Rican, Cuban, or other Hispanic origin.

Region—Region of residence is derived from the birth certificate. Standard classifications of the U.S. Bureau of the Census were used to assign States to the Northeast, Midwest (formerly North Central), West, or South regions.

Wantedness status—Wantedness status is derived from the mother's questionnaire with the question: "Thinking back, just before you became pregnant with your new baby, did you want to become pregnant at that time?" Responses were as follows: (1) "I wanted this pregnancy at an earlier time, as well as at that time"; (2) "I wanted to become pregnant at that time"; (3) "I did not want to become pregnant at that time, but I wanted another child sometime in the future"; or (4) "I did not want to become pregnant at that time, or at any time in the future."

Age of mother—Age is derived from the birth certificate and refers to the mother's age at last birthday.

Live-birth order—Live-birth order is derived from the birth certificate and refers to the total number of children ever born alive to the mother, including the sample live birth.

Education—Education of mother is derived from the mother's questionnaire and refers to the highest grade of school completed. Trade or business school education is not included.

Suggested citation

National Center for Health Statistics, C. W. Warren, K. G. Keppel, and Melinda L. Flock, 1987. Trends and variations in post partum sterilization in the United States, 1972 and 1980. *Monthly Vital Statistics Report.* Vol. 36, No. 7, Supp. DHHS Pub. No. (PHS) 88–1120. Public Health Service. Hyattsville, Md.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Centers for Disease Control
National Center for Health Statistics
3700 East-West Highway
Hyattsville, Maryland 20782

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300

To receive this publication regularly, contact the National Center for Health Statistics by calling 301 436–8500

FIRST CLASS MAIL
POSTAGE & FEES PAID
PHS/NCHS
Permit No. G–281